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## Economic Commission for Europe

### Inland Transport Committee

#### Working Party on Inland Water Transport

##### Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation

###### Fifty-fifth session

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Item 7 (b) of the provisional agenda

##### Promotion of River Information Services and other Information and Communication Technologies in inland navigation:

##### International Standard for Notices to Skippers in Inland Navigation (resolution No. 80)

## Revision of the International Standard for Notices to Skippers in Inland Navigation (resolution No. 80)

### Note by the secretariat

#### Mandate

1. This document is submitted in line with cluster 5: Inland Waterway Transport, paragraph 5.1 of the programme of work 2018-2019 (ECE/TRANS/SC.3/2017/24) adopted by the Inland Transport Committee at its eightieth session (20-23 February 2018).
2. At its fifty-fourth session, the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation (SC.3/WP.3) noted that the revised International Standard for Notices to Skippers had been adopted on 20 November 2018 by Commission Implementing Regulation 2018/2032 of 20 November 2018 (Informal document SC.3/WP.3 No. 4 (2019)) and asked the secretariat to analyse the amendments introduced in the International Standard for Notices to Skippers in cooperation with the Chair of the Notices to Skippers Expert Group with a view of possible updating resolution No. 80 (ECE/TRANS/SC.3/WP.3/108, para. 81).
3. The annex to the present document contains a brief overview of the changes introduced to the revised standard and an amendment proposal to the annex to resolution No. 80, prepared jointly by the Chair of the International Notices to Skippers Expert Group and the secretariat. SC.3/WP.3 may wish to start considering the proposed amendments and decide as appropriate.

## Annex

# Amendment proposal for the International Standard for Notices to Skippers in Inland Navigation

## I. Overview of the amendments introduced in the International Standard for Notices to Skippers

The structure and the contents of the standard as set out in the annex to resolution No. 80 have been considerably revised.

In order to improve safety of navigation, Notices to Skippers (NtS) included a new type of message dedicated to weather-related notices.

The reference tables related to waterway gauges should be removed from resolution No. 80, because the reference data contained therein, such as reference values for low and high water level, are dynamic. Such data should be included and maintained by member States in the European Reference Data Management System operated by the European Commission.

The Encoding Guides for editors and application developers are included in the technical specifications as appendices A and B to the standard.

In order to improve data exchange between the authorities, specifications related to the data exchange are set out in appendix D to the standard to ensure the operability.

The Reference tables included in appendix E are improved and new codes are defined in a new Reference table, which contains harmonized search interface labels for the graphical user interface. Moreover, new tags, values and codes should be added to the existing Reference tables and redundant items should be removed.

Appendices:

- Appendix A: NtS Encoding Guide for editors
- Appendix B: NtS Encoding Guide for application developers
- Appendix C: NtS XML Schema Definition (XSD)
- Appendix D: NtS Web Service Specification (WSDL)
- Appendix E: NtS Reference Tables.

## II. Amendment proposal to the annex to resolution No. 80\*

### 1. ~~Introduction~~ *General provisions*

#### 1.1 *Definitions*

1.1 — In the following, the primary functions and performance requirements of international standards for notices to skippers for inland navigation are described.

1.2 — Fairway Information Services (FIS) ~~contain~~ **mean** geographical, hydrological and administrative ~~data~~ **information regarding the waterway (fairway)** that are used by ~~skippers~~ **boatmasters** and fleet managers to plan, execute and monitor a ~~trip~~ **voyage**. The terms “**boatmaster**” and “**skipper**” used in the present standard shall be deemed to be equivalent with the term 'ship master' used in the Guidelines and Recommendations for River Information Services (resolution No. 57), while the term “**fleet managers**” is defined in the International Standard for Tracking and Tracing on Inland Waterways (VTT) (resolution No. 63).

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\* *Note by the secretariat:* unless indicated otherwise, the text proposed for deletion is ~~struck through~~, the new text is **bold** (in the main text) and **bold italics** (in titles).

FIS provide dynamic information (~~e.g. such as~~ water levels, water level predictions ~~etc.~~) as well as static information (~~e.g. regular~~ **such as** operating times of locks and bridges) regarding the use and status of the inland waterway infrastructure, and thereby support tactical and strategic navigation decisions.

~~1.3~~ Traditional means to supply FIS ~~are e.g. include~~ visual aids to navigation, notices to skippers **published** on paper, **provided by** broadcast and **by** fixed telephone on locks. The mobile phone ~~using GSM~~ has added new possibilities of voice and data communication, but ~~GSM cellular network~~ is not available in all places and at all times. Tailor-made FIS for the waterways can be supplied by radiotelephone services on inland waterways, Internet services or electronic navigational chart (ENC) services (~~e.g. service, such as the Inland~~ Electronic Chart Display and Information System for inland navigation (Inland ECDIS) with **Electronic Navigational Chart (ENCs)**).

## 1.2 *Primary functions and performance requirements for Notices to Skippers*

~~1.4~~ The following **This** technical specifications for Notices to Skippers (NtS) provides rules for the data transmission of fairway information via Internet ~~services~~.

~~1.5~~ The standardization of Notices to Skippers NtS shall:

**(a) provide information related to fairway conditions, traffic, weather, water levels and ice for FIS;**

~~(a)~~ **(b) provide automatic translation of the most important content of notices in all the languages of the participating countries; using standard vocabulary based on code lists (the NtS Reference Tables as provided in Appendix E);**

~~(b)~~ **(c) provide be provided in a standardized structure of data-sets in all the participating countries to facilitate the integration of notices in voyage planning systems;**

~~(c)~~ **(d) provide a standard for water level information;**

~~(d)~~ **(e) be compatible with the data-structure of the RIS Index and Inland ECDIS to facilitate integration of Notices to Skippers NtS into Inland ECDIS.**

~~(e)~~ **(f) facilitate data exchange between different countries.**

**The technical specifications for NtS facilitate the data exchange among NtS systems of different countries and towards other applications making use of NtS data, including Inland ECDIS.**

~~1.6~~ It will not be possible to standardize all the information, which is contained in Notices to Skippers. Part of the information will be provided as “free text” without automatic translation. **Some information contained within NtS messages can be standardized, some cannot.**

The standardized part ~~should~~ **shall** cover all the information which is

**(a) important for the safety of inland navigation (for example: sunken small craft on the right side of the fairway at the Danube, river-km 2010);**

**(b) needed for voyage planning (for example: including closure of locks, and reduction of vertical clearance, etc.);**

~~1.7~~ Additional information (~~for example: that is not relevant for safety or voyage planning, including the cause of the closure of a lock~~) ~~can~~ **may** be given as free text, **without automatic translation. The use of free text shall be restricted to a minimum.**

## 2. *Provision of Notices to Skippers*

**Member States shall ensure that NtS messages are accessible online and via standardized NtS web service, in accordance with the technical specifications described in this annex and its appendices. The standardized NtS web service specification is included in appendix D in the form of a ‘Web Service Description Language’ (WSDL).**

**The standardized NtS web services shall provide the user with the possibility to select messages on the grounds of at least one of the following criteria:**

- (c) a specific waterway section;
- (d) a specific part of a waterway, defined by the river-km of the starting and the end point;
- (e) time of validity of the notice (start date and end date of validity period);
- (f) date of publication of the notice (date and time of publication).

NtS messages that comply with the standards referred to in this annex can be provided, among other tools, by:

- (a) mobile applications (apps);
- (b) E-mail services.

Data exchange among the NtS systems operated in different countries may be carried out. All systems using the standards described in the Annex of this Regulation may integrate NtS of other systems in their own services, provided the content of the message is not modified. Users shall be informed in case the connection to a source of integrated NtS is interrupted or not available.

## **~~2. Data standard~~**

(deleted)

## **~~3. Water level information~~**

(deleted)

## **~~4. Weather messages~~**

(deleted)

## **~~5. Way of distribution~~**

(deleted)

## **~~6. Procedure for changes in reference tables and XML scheme of notices to skippers~~**

(deleted)

## **~~7. Structure of the messages and coding in XML format~~**

### **~~7.1 Structure of the notices to skippers~~**

#### **3. NtS message types**

~~7.1.1 Notices to Skippers messages have the following information sections: NtS messages are essential messages that are standardized to the highest part possible. There are four NtS message types, namely:~~

- ~~(a) Identification of the message;~~
- ~~(b) (a) Fairway and traffic related message;~~
- ~~(c) (b) Water level related messages as:~~
  - ~~• Water level messages;~~
  - ~~• Least sounded depth messages;~~
  - ~~• Vertical clearance messages;~~
  - ~~• Barrage status messages;~~
  - ~~• Discharge messages;~~
  - ~~• Regime messages;~~
  - ~~• Predicted water level messages;~~

- ~~▲ Least sounded predicted depth messages;~~
- ~~▲ Predicted discharge messages;~~
- ~~(d)~~ (c) Ice **related** message;
- ~~(e)~~-(d) Weather **related** messages.

#### 4. Structure of NtS and encoding of NtS messages

This chapter describes the structure and encoding of standardized electronic NtS messages.

An NtS message is a structured message using standardized elements, wherever possible. The use of free text in the data elements shall be restricted to a minimum.

The standardized NtS extended mark-up language (XML) schema definition, referred to as XSD in this standard, contains the standardized code values and possible formats is included in Appendix C.

The standardized code values and the XML tags, their meaning and translation are provided in the NtS Reference Tables in Appendix E. [They are also available electronically in the European Reference Data Management System (ERDMS) operated by the European Commission].

##### 4.1 General structure

~~7.1.2—A standardized An NtS message in XML format contains therefore also 4 different consists of the following sections, in addition to the message identification mentioned in subparagraph (a) below, as shown in Fig. 7.1.2:~~

- (a) **Message identification section;**
- ~~(b) Fairway and traffic related messages—Section defining the applicable object(s) or fairway section(s) the message is related to;~~
- (c) **Limitation(s) for a fairway and traffic related message, measurement(s) for a water related message, ice condition(s) for an ice related message or weather report(s) for a weather related message.**
- ~~(d) — Ice messages;~~
- ~~(e) — Weather messages.~~

~~In one message only two sections will be filled: the message identification section and at least one of the following sections: Fairway and Traffic related messages, Water level related message, Ice message or Weather message (mix of sections, different type of message information is not allowed).~~

~~The fairway and traffic related section contains limitations for a Fairway (link) or an Object. A Notice to Skippers relates to a Fairway or a geographical Object (point). If the message is about an Object, the fairway section shall be filled with the related fairway information without the limitation section.~~

~~If a notice contains different limitations for different target groups or different communication information for different limitations, several fairway and traffic related sections with the same number can be used.~~

~~The Water level related message section contains measurements for an Object usually a tide gauge.~~

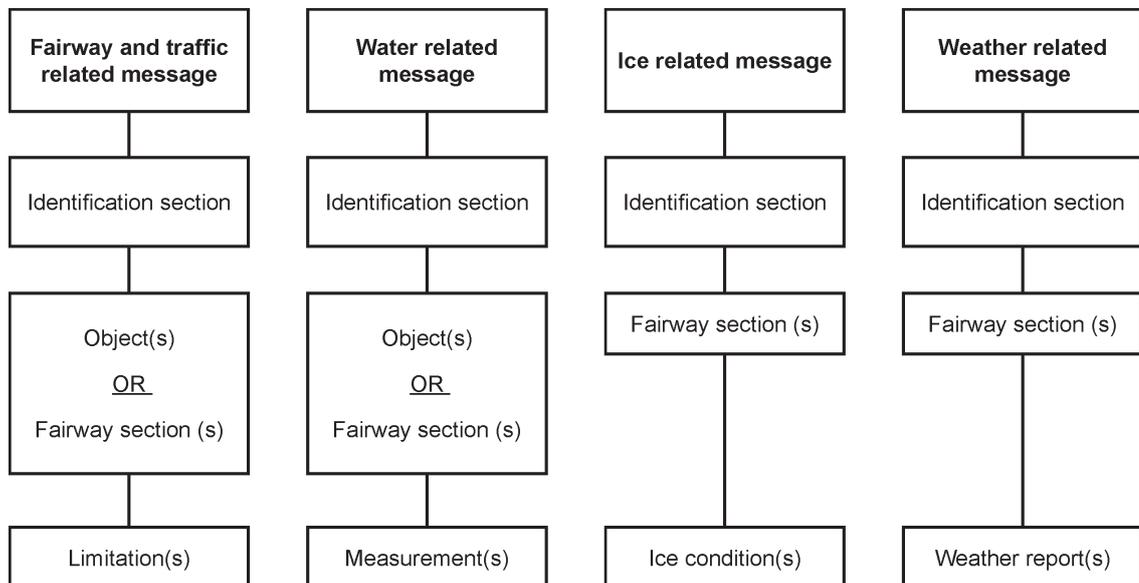
~~The Ice message section contains information about the ice conditions for a fairway (link).~~

~~The Weather message contains information about the weather conditions for a fairway (link).~~

Figure 7.1.2 (deleted)

**Figure 1**

**Notice to Skippers message structure**



**4.1.1 Identification section**

Each message must contain an identification section. The identification section contains general information about the issuer and date of publication of the message.

**4.1.2 Fairway and traffic related message**

The fairway and traffic related message contains information for fairway section(s) or object(s), and it is used to indicate limitation(s) for the following purposes:

- (a) “Warning”: relevant for safety. The warning must contain at least one limitation that results in direct and concrete endangerment of persons, crafts or facilities, such as welding works on a bridge producing sparks, inspection cage/workers hanging from a bridge, obstacle in the fairway,
- (b) “Announcement”: relevant for voyage planning or safety. The announcement may contain limitations, such as blockage of a lock chamber due to maintenance works, dredging on the fairway,
- (c) “Info service”: general information that is not directly linked to voyage planning or safety. The info service must not contain specific limitations, therefore it is not directly relevant to voyage planning or safety. Such information might include general information such as local rules of traffic, Inland ECDIS Update.

**4.1.3 Water related message**

The water related section contains values or predictions for:

- (a) Water level;
- (b) Least sounded depth;
- (c) Vertical clearance;
- (d) Barrage status;
- (e) Discharge;
- (f) Regime.

Usually, water related information is created and published automatically based on data received from sensor equipment (such as tide gauge), systems (such as water level

model) or infrastructure (such as barrage status). There may be different triggers for publication, such as periodical publication or reaching certain value.

#### 4.1.4 *Ice related message*

The ice related message contains information about the actual or predicted ice conditions for fairway section(s). Ice related information is usually generated by competent personnel based on local observation and professional assessment.

#### 4.1.5 *Weather related message*

The weather related message contains information about (dangerous) weather conditions for inland navigation.

In order to facilitate the distribution of hydro-meteo information from hydro-meteo networks to skippers, weather related messages may be published.

### 4.2 *Explanation of XML tags and code values in the NtS Reference Tables*

The meaning of the different elements used in the NtS XML schema definition (XSD) is described in the NtS Reference Tables provided in appendix E. The structure, format and possible values of all XML elements are described in the NtS XSD in appendix C.

(a) Latitude and longitude coordinates are encoded according to the World Geodetic System 1984 and are presented in degrees and minutes with at least three, but preferable four decimals ([d]d mm.mmm[m] N, [d][d]d mm.mmm[m] E).

(b) Decimals in numeric fields are indicated with a decimal point ('.'). No separators for thousand are used.

(c) NtS messages shall only use the following units for the values included in the XML message: cm, m<sup>3</sup>/s, h, km/h and kW, m/s (wind), mm/h (rain) and degree Celsius. National applications may convert the units for user-friendly display.

### 4.3 *Identification of fairway sections and objects in NtS messages*

To fulfil the minimum data requirements for provision of information about objects relevant for inland navigation [as referred to in Article 4(3)(a) of Directive 2005/44/EC], the International Ship Reporting Standard (ISRS) Location Code has to be used in the object section. The ISRS Location Code is used to uniquely identify objects and fairway sections and to ensure interoperable RIS Systems and Services (such as to combine information about infrastructure from the RIS Index, Inland ECDIS and NtS for voyage planning).

The ISRS Location Code is a 20-digit alphanumerical code used to establish a unique and standardized relation between objects in River Information Services. It consists of the following mandatory data elements, arranged in four information blocks:

(a) Block 1: UN/LOCODE (5 letters, alphanumerical), comprising

- Country code (2 digits, alphanumerical) (1), and
- Location code (3 digits, alphanumerical, 'XXX' if not available);

(b) Block 2: Fairway section code (5 digits, alphanumerical, to be determined by the national authority);

(c) Block 3: Object Reference Code (5 digits, alphanumerical, 'XXXXX' if not available);

(d) Block 4: Fairway section hectometre (5 digits, numerical, hectometre at the centre of the area or '00000' if not available).

The ISRS Location Codes and the reference data of objects are maintained by the member States in the RIS Index [and submitted to the ERDMS operated by the European Commission according to the Maintenance procedures for the RIS Index published on the ERDMS website].

#### **4.4 Rules for encoding of NtS messages**

NtS messages shall be encoded in line with the NtS Encoding Guide for editors (appendix A) and in line with the NtS Encoding Guide for application developers (appendix B).

#### ~~7.2 XML message definition overview~~

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~~7.2.1 This section gives an overview of the definition of the message coded in XML. The XML scheme (see Table 7.2.1) containing a complete definition for all the XML elements including the possible formats, is maintained by the Notices to Skippers Expert Group.~~

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